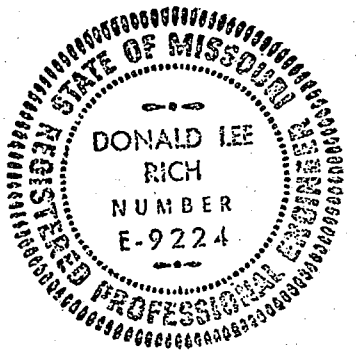
REPORT ON

CLOSURE OF "A" POND
FOR
ADVANCED CIRCUITRY DIVISION
LITTON INDUSTRIES
Springfield, Missouri

October 1982



HOOD - RICH
Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802

HOOD-RICH • ARCHITECTS AND CONSULTING ENGINEERS • 801 SOUTH GLENSTONE
SPRINGFIELD, MO. 65802
417 862-4483

October 22, 1982

Mr. Ron Enos
President
Advanced Circuitry Division
Litton Industries
4811 West Kearney
Springfield, Missouri 65803

Re: Closure of "A" Pond

Dear Mr. Enos:

Please find attached herewith six (6) copies each of our report on the closure of "A" Pond.

We appreciated very much the cooperation of both your personnel and the DNR representatives which allowed this project to be satisfactorily done.

If anything further is needed from us, please let me know.

Sincerely,

HOOD-RICH

Paul T. Hickman

PTH:jme

Attachments

JACK K. HOOD, Architect
DONALD L. RICH, P.E.

REPORT ON CLOSURE OF "A" POND FOR ADVANCED CIRCUITRY DIVISION, LITTON INDUSTRIES, SPRINGFIELD, MISSOURI

I. BACKGROUND

The Advanced Circuitry Division of Litton Industries operates a large electronic circuitboard manufacturing plant located on West Kearney Street near the Municipal Airport in Springfield, Missouri.

When the plant went into operation in the late 1960's City sanitary sewers were not available for the discharge of process wastes therefore, the company installed a pretreatment and disposal system consisting of precipitation, and sedimentation process units followed by a 4 acre earthen percolation basin (A pond).

The process wastewaters contained varying quantities of heavy metals, particularly copper, chromium, lead and nickel of which were partially precipitated prior to discharge. The pond was constructed with a 6 inch bottom layer of finely crushed limestone to provide a highly alkaline zone which the liquid had to pass through before reaching the underground system in an attempt to capture the residual metals which were not precipitated in the plant process. As a result, considerable quantities of metal hydroxide sludge accumulated in the pond bottom over the years.

During the late 1970's the Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (DNR) became concerned that the contents of "A" pond could contaminate the underground acquifers either by gradual seepage or catastrophic collapse of the pond bottom. They subsequently required Litton to develop a plan for elimination of their discharge to the pond and its final closure. In the meantime, the City of Springfield was proceeding with plans to construct the Airport Trunk Sewer which would connect with their Northwest Wastewater Treatment Plant. During March 1982 this sewer line became operational and the plant's discharge to the pond was discontinued. The pond liquid contents were then

pumped to the City's Southwest Wastewater Treatment Plant (The City's largest facility). Following this the sludges were sampled and analyzed and a final closure plan developed with the Missouri Department of Natural Resources. A part of this plan called for an independent engineer to act as a third party in overseeing the closure operation. Litton then contracted with Hood-Rich for this service.

Exhibit A, attached hereto, is copies of the interim requirements, final closure plan, initial sludge sample test results and appropriate correspondence.

II. CLOSURE

A. Sludge Removal and Disposal

Litton contracted with Chemical Waste Management, Inc., of Riverdale, Illinois to provide the necessary equipment, trucks and manpower to physically remove the sludge, haul it to their landfill in Joliet, Illinois, and dispose of it properly.

A track mounted front end loader was used to move and stockpile the sludge in the pond's southwest corner and to load the trucks. The trucks were open top which are normally used for hauling coal, aggregate, etc.,

Mobilization began during the week of August 23rd, 1982, and loading of the trucks began on August 30th. However, heavy rains early that morning made the pond bottom very "sloppy" which made the sludges difficult to move and load. After considerable deliberation, two decisions were made to expedite removal, (1) Pits were made in the lime sand and the water pumped to Litton's "C" pond for return to the plant's treatment facility and (2) dry lime sand was brought in and used as an absorbent in the trucks. This facilitated drying of the pond bottom and prevented excess water inside the truck lining. All trucks were lined each time with sheets of 6 mil PVC material.

After two days of good weather, considerable drying occurred which made removal much easier.

During the removal process, sampling and testing was done on all areas that had been scraped to determine whether the area needs additional removal or if it was satisfactory for closure. Once an area was approved for closure, initial covering with earth from the dikes was done.

Once the area dried, removal proceeded smoothly with clean up, equipment recontamination and the last loads hauled out on September 14th.

Attached as exhibit B are copies of Hood-Rich daily inspection reports which narrate the activities noted that day.

B. Sampling

During the excavation, stockpiling and loading process when an area appeared to have all sludges removed, samples were obtained and delivered to the Litton laboratory for analyses. Immediately upon receipt of the results, the area was either rescraped and resampled or approved for closure by the Department of Natural Resources representative. Once closure was approved, initial covering was done.

The writer observed at least one sampling of all except two places. Sampling was done by either David Edwards of Litton (under my direction) or Burt McCullough of DNR. It is felt that the sampling was conservative in that they were taken at points, in the sample areas, which visually appeared to have higher metal concentrations.

Attached as exhibit C is a copy of the sampling plan developed by the Department of Natural Resources.

C. Testing

All samples were analyzed by the plant laboratory on an Atomic Absorption Unit.

During the second day of testing, a quality assurance analysis of the laboratory was made by Mr. David Paulsen of DNR. At the completion of his visit, information was relayed to Hood-Rich by Burt McCullough of DNR that Mr. Paulsen was quite satisfied with the analytical equipment and procedures to perform the necessary testing.

One change was made during the quality assurance visit in the manner that lead concentrations were reported, that of using milligrams per kilogram rather than parts per million (See attached Exhibit D).

Following in Table 1 is a summary of the final test results of all sampling points with a chart of the allowable levels in the residual soils.

TABLE 1
LITTON POND CLOSURE
SUMMARY OF FINAL ANALYSIS

Sample #	Ni-ppm	Cr-ppm	Pb-mg/kg(Tep)	Pb-mg/kg (Total)
A-1	1.995	0.0	30	118
A-2	1.795	0.0	23	35
A-3	2.088	0.0	28	30
A-4	0.193	0.0	31	120
A-5	1.412	0.0	31	33
A-6	2.15	0.0	28	150
A-7	1.69	0.0	29	240
A-8	1.18	0.0	28	93
A-9	1.45	0.0	31	173
A-10	0.60	0.0	26	116
B-1	1.840	0.223	17	66
B-2	0.817	0.025	24	26
B-3	2.173	0.041	32	44
B-4	4.150	0.271	72	78
B-5	1.425	0.035	27	70
B-6	3.670	0.202	38	89
B-7	3.220	0.079	40	45
B-8	2.860	0.044	35	118
B-9	3.600	0.059	8	25
B-10	0.910	0.043	26	57

DESIRED CONCENTRATIONS	MAXIMUM CONCENTRATIONS
Lead (Total & TEP) - 150 mg/kg	250 mg/kg
Chromium - 1.5 ppm	2.5 ppm
Nickel - 4.0 ppm	10 ppm

D. Final Grading and Seeding

As was narrated previously herein, as soon as test results showed that the metal levels were below the minimums set forth in the closure plan, partial covering of the individual areas started. Just after the first area was approved it became apparent that cross section surveys were needed to establish the actual existing elevations so that available and needed earth quantities could be computed and a preliminary grading plan developed. These surveys, computations and plans were done by Hood-Rich personnel.

When the last loads of sludge were hauled out on September 14th, a large percentage of the bottom had been initially covered. The final cover was then started and was completed by October 8th. As a final check, the Hood-Rich survey party then did cross sections of the area. This field information was then taken and final contours and sections were drawn. These maps are included with this report as Exhibit E (folded in map pocket on back cover). A very small area on the west side (approximately 20' x 100') has a bottom cover of about 22 inches which is slightly less than the two foot requested by DNR, but the remainder of the area has from 2 feet up to 4 feet of cover. To go back and move in the additional 2 inches would require more than just additional cover for this area in that material will have to be taken from areas that have been seeded. It is felt that the 22 inch cover for this portion will make very little, if any, difference. Of more importance is to grade the site for adequate but gradual drainage, to prevent excessive erosion until a good grass cover is established.

On October 11th seeding with fescue was done to attempt a start of cover. However, it is questionable that a stand can be obtained at this late date. The area will probably need to be worked and reseeded in the spring of 1983.

E. Conclusions

1. Removal of the pond sludges was accomplished in a satisfactory and timely manner even though some adverse weather conditions were encountered in the beginning stages.

2. The trucks were lined and sealed satisfactorily.

3. Sampling was done in a conservative manner.

4. A quality assurance analysis of Litton testing equipment and procedures by DNR was done with subsequent approval.

5. Test results show that satisfactory removal of sludges has been done.

6. Final site grading is adequate even though a very small area has 22 inches of cover rather ahan the 24 inches. It is felt that this will make very little, if any, difference. In fact, subsequent pH values will be more likely to remain at alkaline levels in the more shallow covered areas than the deeper ones.

7. Hood-Rich feels that all tasks for adequate sludge removal was accomplished in a timely and realistic manner and certifies that the closure plan was essentially carried out.

Respectfully submitted,

Paul T. Hickman, P.E.
HOOD-RICH, Architects & Consulting Engineers
801 S. Glenstone
Springfield, MO. 65802

Approved by,

David Edwards
Facilities Manager
Advanced Circuitry Division - Litton
4811 W. Kearney
Springfield, MO 65803

EXHIBIT "A"

Litton ADVANCED CIRCUITRY

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

August 4, 1982

Mr. Fred Lafser
Director, Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Dear Mr. Lafser:

Please find enclosed our revised closure plan which reflects the information requested by Mr. Bedan in his letter of July 26, 1982, and conversions among Mr. Meiburger, Mr. McCullough, Mr. Dow and myself.

If additional information is required, please notify me.

Sincerely,

David Edwards
Facilities Manager

DE/bs

Enclosure

CC: Mr. Robert Schreiber, Director D.N.R.
Mr. Gerald Lucey, ACD
Mr. Ron Enos, ACD
Mr. Robert Schaefer, Superintendent of Sanitary Services, Springfield, Mo.
Mr. Burt McCullough, DNR
Mr. Paul Meiburger, DNR
Mr. Paul Hickman, Hood-Rich

Subpart G - Closure and Post-Closure

265.111 Closure and Post-Closure

A. Owner shall close facility in a manner to minimize all hazards.

265.112 Closure Plan

A. In March, 1982, the city sewer system was available for hookup and Litton began its use for effluent discharge. At that time, Litton discontinued discharging effluent waters to "A" pond. Due to the DNR Eminent Hazardous Action of March, 1982, the waste water in "A" pond was removed. Closure is expected to begin between August 1st and 15th, 1982.

B. Enclosed are analysis by independent testing labs of our sludge. The samples were approximately one liter in size and taken as representative grab samples. The samples were taken at the North East and South West corners of our lagoon. All samples were collected in inert, clean containers. Also included, are our analysis of sludge samples taken by Mr. Paul Meiburger of the DNR on July 29, 1982. The analysis was performed by our lab for comparison with the state laboratory.

C. Based on calculations enclosed, approximately 1800 yd^3 of sludge will have accumulated. Our contractor, National Industrial Environmental Service (NIES) will remove, transport, and dispose of the sludge in a safe and timely manner. The disposal site will be Joliet, Illinois. Appropriate Illinois permits are currently being reviewed by the state of Illinois.

D. Advanced Circuitry proposes to remove the limestone and/or soil beneath the sludge to a depth where the levels of chrome, nickel, and total lead meet the levels specified below. The maximum allowable metal levels, in the residual soil, are:

Lead (TEP)	1.5 ppm
Total Lead (Digestion)	1.5 ppm
Chromium (TEP)	1.5 ppm
Nickel (TEP)	4.0 ppm

or, sampling at a depth of 12" below the surface to insure that significant decreases (an order of magnitude) with depth are not occurring, so long as the uppermost residual soil metal content does not exceed:

Lead (TEP)	2.5 ppm
Total Lead (Digestion)	2.5 ppm
Chromium (TEP)	2.5 ppm
Nickel (TEP)	10 ppm

After the sludge is removed, surface samples will be taken at locations shown in the attached sketch. All samples will be at least one liter in volume and will include the top 3 inches of soil. This sample will then be divided into 2 samples and marked identically. The first sample will be given to the DNR representative on hand during our closure. The second sample will be tested in our laboratory for the above metals. Advanced Circuitry will test for chromium, lead, and nickel per EP Toxicity Test Procedure revised by 46FR35247, July 7, 1981, and test for total lead per EPA Manual Section 4.1.3, EPA #600/4-79-020 "Method For Chemical Analysis For Water And Waste". The Atomic Absorption unit at Advanced Circuitry is capable of measuring concentrations down to .01 ppm of lead, .002 ppm of chromium, and .01 ppm of nickel.

D. Cont'd

It is expected that our laboratory will run quality assurance samples, provided by the DNR, on a daily basis.

The flow diagram for sampling process is as follows:

(1) Surface sample taken and analyzed:

a) If all metal level values are below table 1, then the general area of sample is suitable for closure.
b) If any metal level value is above table 1, but below table 2, then go to (2) .
c) If any metal level value is above table 2, then go to (3) .

(2) Take soil sample 12" beneath surface and analyze for metal that failed in (1) :

a) If metal level is greater than .1 times the surface value, then the general area is suitable for closure.
b) If metal level is less than .1 times the surface value, then the additional amount of soil and/or limestone to be removed from the surface will be determined by the formula:

$$\frac{\text{Surface Metal Level}}{\text{Table 1 Metal Level}} = \frac{\text{Depth to be Removed}}{12"}$$

(3) Take soil sample 12" beneath surface and analyze for metal that failed in (1) .

a) If metal level is greater than .1 times the surface value, then the general area is suitable for closure.
b) If the metal level is less than .1 times the surface value, then the additional amount of soil and/or limestone to be removed will be determined by the formula:

$$\frac{\text{Surface Metal Level}}{\text{Table 2 Metal Level}} = \frac{\text{Depth to be Removed}}{12"}$$

Table 1

Total Chromium or Chrome VI (TEP)	1.5 mg/l
Nickel (TEP)	4.0 mg/l
Total Lead (Digestion)	1.5 mg/l
Lead (TEP)	1.5 mg/l

Table 2

Total Chromium or Chrome VI (TEP)	2.5 mg/l
Nickel (TEP)	10.0 mg/l
Total Lead (Digestion)	2.5 mg/l
Lead (TEP)	2.5 mg/l

Before any area can be "closed", the registered professional engineer must sign the analysis to show his concurrence with the results. Once the engineer concurs, the area will be backfilled with approximately 2" of dirt. The final dirt depth will be determined after all areas have been found suitable for closure. At that time, a topographic survey will be conducted on site to assure good drainage.

E. Any accumulation of sludge will be stored within the confines of "A" pond. The only need of accumulation is due to scheduling delays between shipments of our sludge. No sludge will be stored for longer than 90 days.

F. Prior to closure starting, the Springfield office of the Missouri Department of Natural Resources will be given five days notice. Actual closure will start between August 1st and August 15, 1982, and will take approximately 8 days. Final closure will consist of grading over and seeding of the site.

G. During closure operations, the DNR representative must be on site at all times due to our expected operating procedure. We plan to remove the sludge, sample, and cover the cleared area as we work our way across the pond.

H. In the unlikely event a sinkhole developes within the confines of "A" pond, the following procedure is recommended:

1) Remove as much sludge and soil from the sinkhole as possible.
2) Fill the sinkhole with large, coarse rocks and mound with smaller rocks to aid drainage.

The above were recommended by State Geologist J. VanDyke and T. Dean on March 18, 1982.

265.113 Time Allowed for Closure

A. Closure is to take place within 180 days of last receipt of wastes.

B. We may apply to Regional Administrator for longer closure time.

265.114 Disposal or Decontamination of Equipment

A. All the equipment and structures used in the closure shall be properly disposed of, or decontaminated by high pressure water spray applied within the confines of "A" pond. This is to be done by NIES.

265.115 Certification of Closure

A. Upon closure, Litton shall submit to the Regional Director certification thereof, signed by the operator and an independent professional registered engineer. The engineering firm of Hood-Rich has been contracted to oversee our operation. The engineer of Hood-Rich, Mr. Paul Hickman, feels that a daily inspection of between one and two hours should adequately enable him to properly evaluate our closure operation.

B. Litton will make every effort to comply with the September 15, 1982, closure and certification date.

265.142 Closure Cost

A. Based on current estimates, the cost to close our waste water lagoon is approximately $180,000.

QUALITY CONTROL LABORATORY ANALYSIS TEST REQUEST

1 OF

Originator Dave Edwards	Dept. Fac.	Ext.	Date 8-3-82
Req'd	Time Req'd	Approval	Shift 1

SAMPLE DESCRIPTION:

Core samples

24 hr analysis of core samples.

ANALYSIS/TEST REQUIRED (EXPLANATION FULLY):

Cu, Cr, Pb, Ni PPM

DATA/RESULTS:

SAMPLE #	Cu PPM	Pb PPM	Ni PPM	Cr PPM		
Inlet Top Middle	0.5	0.4	0.7	0.0		
Inlet Bottom Middle	0.1	0.4	0.6	0.0		
Inlet Top Middle	3.1	0.4	0.5	0.0		
Inlet Bottom Middle	0.9	0.4	0.5	0.0		
A Center	0.9	0.4	0.5	0.0		
B Center	0.7	0.4	0.5	0.0		

CALCULATIONS:

#82-6139 Total Lead = .001% by weight

TECH B. Hobson DATE & TIME COMP. 8-3-82 9:15

Distribution: Originator, Lab file. Originator is responsible for any additional distribution.

1135 REV A

QUALITY CONTROL LABORATORY ANALYSIS TEST REQUEST 1 OF

Originator Dave Edwards	Dept. Fac.	Ext. 329	Date
Test Req'd	Time Req'd	Approval	Shift

SAMPLE DESCRIPTION:

Core Samples

ANALYSIS/TEST REQUIRED (EXPLANATION FULLY):

Cu, Pb, Ni, Cr PPM

DATA/RESULTS:

SAMPLE #	Cu PPM	Pb PPM	Ni PPM	Cr PPM		
6143	0.4	0.4	33	0.1		

CALCULATIONS:

TECH B. Hall DATE & TIME COMP. 8/82 1230

Distribution: Originator, Lab file. Originator is responsible for any additional distribution.

QC1135, REV A

QUALITY CONTROL LABORATORY ANALYSIS TEST REQUEST 1 OF

nator DAVE EDWARDS	Dept. FAC.	Ext. 329	Date
Req'd	Time Req'd	Approval	Shift

MPLE DESCRIPTION:

3 CORE SAMPLES

LYSIS/TEST REQUIRED (EXPLANATION FULLY):

Cu, Pb, Ni, Cr ppm

A/RESULTS:

PLE #	Cu ppm	Pb ppm	Ni ppm	Cr ppm		
6138	2.1	0.4	3.2	0.1		
6140	9.1	0.5	7.5	0.1		
6141	100.0	0.2	19.0	0.2		

CULATIONS:

TECH B. Hall DATE & TIME COMP: 8-1-82 1100

Distribution: Originator, Lab file. Originator is responsible for any additional distribution.

1135, REV A

QUALITY CONTROL LABORATORY ANALYSIS TEST REQUEST

Originator Dave Edwards	Dept. Fac.	Ext. 329	Date
Date Req'd	Time Req'd	Approval	Shift

SAMPLE DESCRIPTION:

Core Samples

ANALYSIS/TEST REQUIRED (EXPLANATION FULLY):

Cu, Pb, Ni, Cr ppm

DATA/RESULTS:

SAMPLE #	Cu ppm	Pb ppm	Ni ppm	Cr ppm		
82-6135	1600	0.7	9.3	0.8		
82-6136	260.0	0.4	150	0.4		
82-6137	1.2	0.5	3.9	0.1		
82-6139	0.4	0.1	0.7	0.0		

CALCULATIONS:

TECH B. Hall DATE & TIME COMP. 8-1-82 11pm

Distribution: Originator, Lab file. Originator is responsible for any additional distribution.

Chemical Waste Management, Inc.
Environmental Remedial Action Division
150 W. 137th Street
Riverdale, Illinois 60627
312/841-8600

July 15, 1982

Litton Industries
Advanced Circuitry Division
4811 West Kearney
Springfield, Missouri 65803

Dear Mr. Copeland:

Chemical Waste Management's ENRAC Division appreciates the opportunity to submit a proposal to remove and dispose of sludge in a lagoon at your Advanced Circuitry Division in Springfield, Missouri.

ENRAC has undertaken and successfully completed many lagoon cleanings in a safe and cost efficient manner. We are confident that we can provide you with service that is unmatched in the industry.

The transportation and disposal figure to Joliet, Illinois is calculated by using a minimum of 22 yd^3 per truck load. The figure is also contingent upon receipt of a state disposal permit.

Application for said permit was made 2 July 82. We should receive approval of this application by the end of July. As you will note in our quotation, I estimate the time required to complete work on your lagoon at 8 working days. This means we can begin work as late as 1 September and complete the closure of the lagoon by your 15 September deadline.

Very truly yours,

Scott Schedell
Project Coordinator

SS/db

Chemical Waste Management, Inc.

TECHNICAL PROPOSAL

The scope of work for this project can be grouped into 3 phases.

1. Cleaning of the lagoon and stockpiling, for loading, of the lagoon sludge

2. Loading of the stockpiled sludge in sealed dumptrailers for transportation to a secure landfill

3. Backfilling and grading of the cleaned lagoon

We propose to use one machine, a track type loader, to complete the 3 phases. This will keep excavating and mobilization costs to a minimum.

When operations begin a hole will be excavated in the surrounding containment berm to facilitate the loading of the sludge material. The loader will then enter the lagoon area and begin stockpiling the sludge near the hole in the containment berm. A representative from your company will have to make a determination as to when the extent of excavation is adequate.

Backfilling operations will begin immediately in clean areas. This will be done by dozing the containment berm into the clean area. The entire lagoon area will then be graded for drainage and appearance.

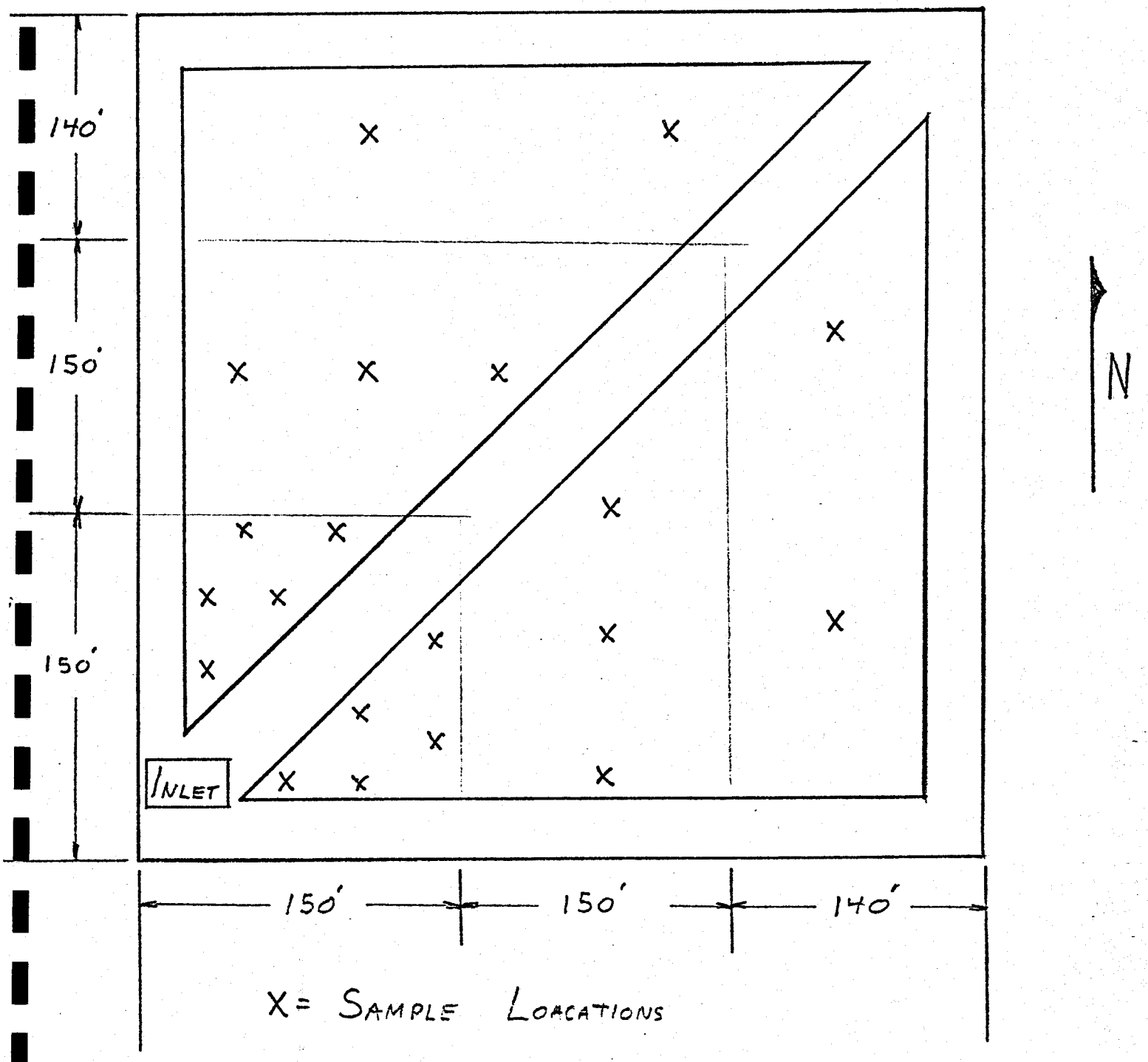
This proposal is based on the assumption that the sludge material can be loaded as is. No provision is made for solidification agents or solidifying procedures.

We propose to remove 300 yd^3 of sludge material per day. This will enable us to complete the project in approximately 8 working days.

Litton ADVANCED CIRCUITRY

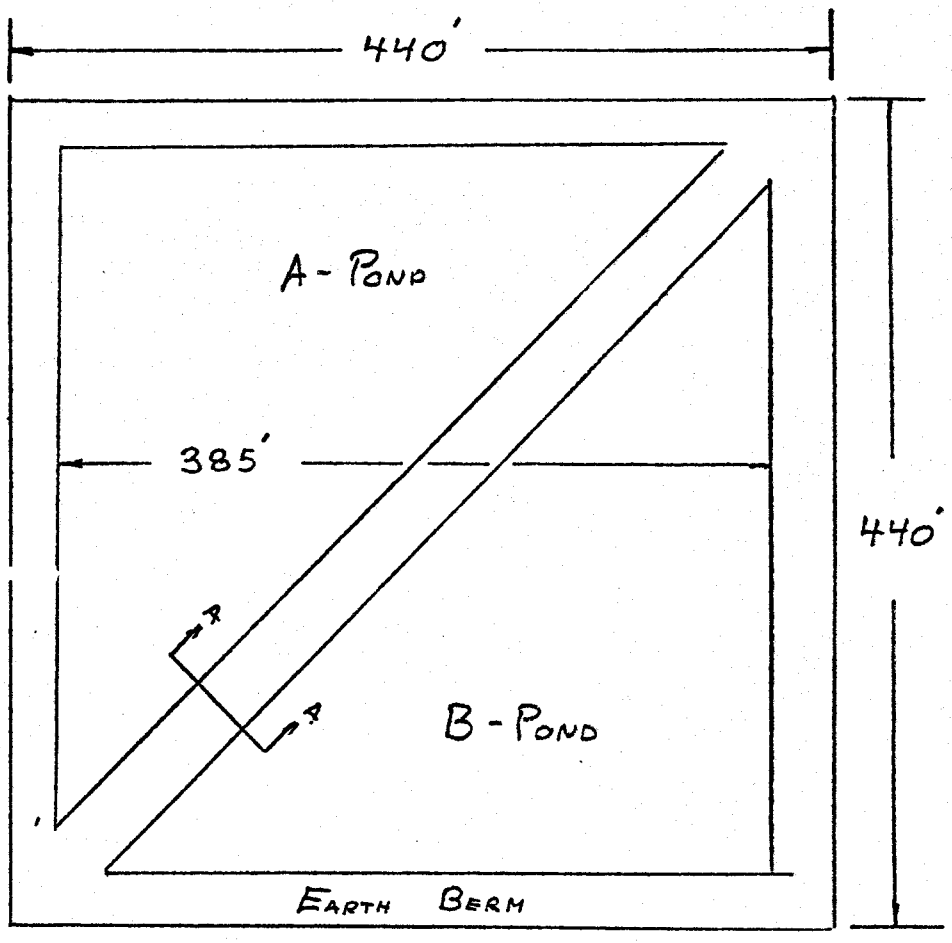
P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

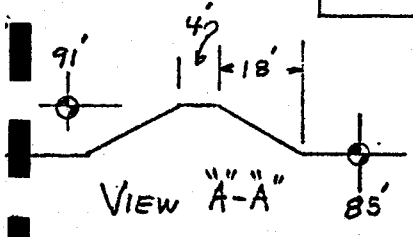
SAMPLING PLAN



Litton ADVANCED CIRCUITRY

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751





VOLUME CALCULATION

ASSUME ① "A" lagoon & "B" lagoon equal size

② Depth of sludge adveroges 4"

$$V = 2\left[\tfrac{1}{2}bh\right]\left[\tfrac{4}{12}\right]$$

$$= 2\left[\left(\tfrac{1}{2}\right)\left(385' - \left(18' + \tfrac{4'}{2}\right)\right)\left(385' - \left(18' + \tfrac{4'}{2}\right)\right)\right]\left[\tfrac{4}{12}\right]$$

$$\cong 44{,}408\ ft^3 \rightarrow \approx 1600\ yd^3$$

Allow 10% error

$V \cong 1800\ yd^3$ max

$1400\ yd^3$ min.

The Bruce Williams Laboratories

ENGINEERING
FOUNDATIONS
INSPECTIONS
ANALYSES
SAMPLING
CONSULTING
RESEARCH

MAIN OFFICE AND LABORATORIES BOX 169 TELEPHONE 623-1556

ESTABLISHED 1898

Joplin, Missouri
64801

June 3, 1982

Litton Industries - Advanced Circuitry Division
4811 West Kearney
Springfield, Missouri 65803

969348 Sample of Sludge from A & B Pond

Tested per Missouri DNR - 10 CSR 25-4.010 Hazardous Waste Identification:

	Results	Specifications
Ignitable Hazardous Waste:		
Flash Point, ASTM D-93	80°C+	60°C
Spontaneous/Friction, Etc.	No	
Ignitable Gas	No	
Oxidizer	No	
Corrosive Hazardous Waste:		
pH	8.6	3 - 12
Corrode Steel	No	
Reactive Hazardous Waste:		
Is normally unstable and readily undergoes violent chemical change but does not detonate; reacts violently with water, forms potential explosive mixtures with water, or generates toxic fumes when mixed with water; or is a cyanide or sulphide-bearing waste which might degenerate toxic fumes under mildly acidic or basic conditions	No	
Is capable of detonation or explosive reaction but requires a strong initiating source or which must be heated under confinement before initiation can take place, or which reacts explosively with water	No	

969348 Sample of Sludge from A & B Pond

	Results	Specifications
Reactive Hazardous Waste: (Continued)		
Is readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures	No	
Is a forbidden explosive (e.g. such wastes include pyrophoric substances, explosives, Autopolymerizable material and oxidizing agents)	No	

Toxic Hazardous Waste:		Extract Level mg/l
Arsenic	<0.01	0.5
Barium	1.00	10.0
Cadmium	<0.01	0.1
Lead	1.70	0.5
Mercury	<0.001	0.02
Selenium	<0.01	0.1
Silver	<0.05	0.5
Cyanide	<0.05	
Sulfides	<0.001	
Copper	14.20	
Nickle	26.00	
Zinc	2.50	
Chromium	4.20	

THE ABOVE FIGURES ARE AS DETERMINED IN OUR LABORATORIES.

THE BRUCE WILLIAMS LABORATORIES

C/4-4301

General Testing Laboratories, Inc.
Engineering — Chemical Consultants
1517 WALNUT STREET / KANSAS CITY, MISSOURI 64108 / 816-471-1205

Date June 14 198 2 Number 42651

Sample of Sludge

Marked Received in lab 5-17-82 P. O. # 71794

Client Litton Industries, Inc.

EP Toxicity (Leachate), Federal Register/Vol. 45, No. 98/ Monday, May 19, 1980, Vol. 45, No. 212/Thursday, October 30, 1980; Vol. 46, No. 129/Tuesday, July 7, 1981

Arsenic	18 micrograms/liter
Barium	Less than 0.05 mg./liter
Cadmium	Less than 0.01 mg./liter
Chromium (Total)	0.65 mg./liter
Chromium (VI)	Less than 0.01 mg./liter
Lead	0.23 mg./liter
Mercury	Less than 0.2 micrograms/liter
Selenium	20 micrograms/liter
Silver	Less than 0.01 mg./liter
Copper	13 mg./liter
Nickel	14 mg./liter
Zinc	0.57 mg./liter
Total As Received:	
Cyanides	2.89 %
Sulfides	Less than 1.0 mg./liter

GENERAL TESTING LABORATORIES, INC.

By Lawrence Poitras

(1)cl

Form 1108

The Bruce Williams Laboratories

ENGINEERING
FOUNDATIONS
INSPECTIONS
ANALYSES
SAMPLING
CONSULTING
RESEARCH

MAIN OFFICE AND LABORATORIES BOX 169 TELEPHONE 623-1556

ESTABLISHED 1898

Joplin, Missouri
64802

April 30, 1982

Litton Industries
Advanced Circuitry Division
4811 West Kearney
Springfield, Missouri 65803

P. O. #71623, 4-22-82
Acct. #62841

969172 Sample of Sludge - NW 4-22-82

Analysis on Basis		as Received	on Leachette
Arsenic	As	<0.001 mg/l	<0.001 mg/l
Lead	Pb	1,219.0 mg/l	1.00 mg/l
Silver	Ag	<0.10 mg/l	<0.10 mg/l
Copper	Cu	36,982.0 mg/l (3.7%)	45.0 mg/l
pH		7.6	5.5
Total Cyanide	Cn	<0.01 mg/l	<0.01 mg/l
Barium	Ba	10.0 mg/l	<0.01 mg/l
Mercury	Hg	<0.001 mg/l	<0.001 mg/l
Chromium - Hexavalent	Cr	2.0 mg/l	<0.01 mg/l
Trivalent	Cr	3,966.0 mg/l	2.60 mg/l
Nickel	Ni	1,869.0 mg/l	2.50 mg/l
% Weight Volatiles @ 100°C.		18.72%	---
@ 600°C.		12.48%	---
Cadmium	Cd	<0.01 mg/l	<0.01 mg/l
Selenium	Se	<0.01 mg/l	<0.01 mg/l
Zinc	Zn	43.0 mg/l	0.10 mg/l

THE BRUCE WILLIAMS LABORATORIES

THE ABOVE FIGURES ARE AS DETERMINED IN OUR LABORATORIES
C/4-4209

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P.O. #71623, 4-22-82
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969173 Sample of Sludge - S.W. 4-22-82

Analysis on Basis		As Received	On Leachette
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Lead	Pb	2,621.0 mg/1	<0.10 mg/1
Silver	Ag	<0.10 mg/1	<0.10 mg/1
Copper	Cu	2,879.0 mg/1	5.9 mg/1
pH		8.0	5.5
Total Cyanide	Cn	<0.01 mg/1	<0.01 mg/1
Barium	Ba	<0.10 mg/1	<0.10 mg/1
Mercury	Hg	<0.001 mg/1	<0.001 mg/1
Chromium - Hexavalent	Cr	2.0 mg/1	<0.01 mg/1
- Trivalent	Cr	4,503.0 mg/1	<0.01 mg/1
Nickel	Ni	3,470.0 mg/1	9.40 mg/1
% Weight Volatiles @ 100°C		26.18%	
@ 600°C		12.85%	
Cadmium	Cd	<0.01 mg/1	<0.01 mg/1
Selenium	Se	<0.01 mg/1	<0.01 mg/1
Zinc	Zn	36.9 mg/1	0.40 mg/1

THE BRUCE WILLIAMS LABORATORIES

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C/4-4209

MISSOURI DEPARTMENT OF NATURAL RESOURCES
P.O. Box 1368 1915 Southridge Drive Jefferson City, Missouri 65102 (314) 751-3241

August 10, 1982

Mr. Ronald Enos
Litton Systems, Inc.
Advanced Circuitry Division
P.O. Box 2847
Springfield, Missouri 65803

Dear Mr. Enos:

In reviewing the closure plan submitted to Mr. Fred Lafser on August 4, 1982, the Department of Natural Resources still has one comment. For this reason we are approving the closure plan as submitted, but with the following condition on the depth and type of cover material over the contaminated limestone.

The 2" (inches) of initial backfill over the area once it is approved for closure is adequate, but the final cover must protect the limestone and prevent excessive amounts of water from entering the limestone bed. The soil in the area is a stony clay which is not a good cover material. For this reason, the limestone must be covered with 2' (feet) of soil cover with compaction by the earth moving equipment.

Please note that Litton Systems, Advanced Circuitry Division must submit written agreement to this condition before the approval of the closure plan is finished. The written agreement to comply with this condition also requires that Mr. Paul Hickman must approve and certify this condition along with the rest of the closure paln.

If you have any questions concerning this letter, feel free to contact Mr. Paul Meiburger of this office.

Sincerely,

David E. Bedan

David E. Bedan, Ph.D.
Director
Waste Management Program

DEB:PM:gh

cc: Mr. Fred Lafser
Mr. Robert Morby
Mr. David Edwards
Mr. Paul Hickman
Mr. Robert Schreiber
Springfield Regional Office

August 17, 1982

Mr. Ron Enos
Advanced Circuitry Div.
Litton Industries
P. O. Box 2847
Springfield, MO. 65803

Re: Closure of "A" Pond

Dear Mr. Enos:

I have received today a copy of correspondence to you from David Bedan PhD. of the Mo. Dept. of Natural Reources concerning the closure plan for "A" Pond.

IN reviewing this letter, I noted he requires that we agree with the condition that a 2" initial backfill layer be placed over an area once it is approved for closure and that the limestone be covered with a final 2 feet of compacted fill. First, the initial 2" layer seems adequate to delineate those areas ready for final cover. I do not feel that an exact 2" is critical.

Concerning the final 2' cover, I have discussed this with a representative of the Soil Conservation Service as to a satisfactory method for sealing the Keeno-Eldon soils which exist at this site. He indicates that this should be done by compacting 6" - 8" lifts with a "sheep's foot" roller which would break down the soil structure and reduce the permeability. In addition, moisture should be added during the rolling process to assure better brakkdown. This is consistent with good engineering practice.

One other item which I mentioned in my letter to David Edwards of your company on July 22nd is that I feel a topographic survey be made once the final cover is in place to determine if any low areas exist that would cause "ponding". If so, the corrections can be made before grass planting.

In summary, we agree with the conditions set forth in Dr. Bedan's letter.

Yours truly,

HOOD - RICH

Paul T. Hickman
PTH:cl

Litton ADVANCED CIRCUITRY

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

July 16, 1982

Mr. John J. Franke
Regional Administrator
U.S. Environmental Protection Agency
Region VII
324 E. 11th
Kansas City, Missouri 64106

Dear Mr. Franke:

Please find enclosed our revised closure plan which reflects additional information requested by Mr. David Bedan of the Missouri Department of Environmental Quality. Advanced Circuitry's change in contractors and methods is due to the advantage to us to have a single contractor of know reliability.

In our last closure plan, I failed to point out that due to the accelerated D.N.R. time table, the Federal requirements of public notification and hearings could not be met. It is hoped that this item no way endangers our closure plan.

Sincerely,

David Edwards

David Edwards
Facilities Manager

DE/bs

Enclosure

CC: Mr. Gerald P. Lucey, Attorney, Litton ACD
Mr. Ronald Enos, President, ACD

Subpart G - Closure and Post-Closure

265.111 Closure and Post-Closure

A. Owner shall close facility in a manner to minimize all hazards.

265.112 Closure Plan

A. In March, 1982, the city sewer system was available for hookup and Litton began its use for effluent discharge. At that time, Litton discontinued discharging effluent waters to "A" pond. Due to the DNR Eminent Hazardous Action of March, 1982, the waste water in "A" pond was removed. Closure is expected to begin between August 1st and 15th, 1982.

B. All tests generated at this time, show the sludge to pass the EPA EP toxic testing levels thereby, rendering it non-hazardous. Due to the expedient manner in which the state has required closure, Litton feels it has been given insufficient time to petition for delisting. To meet the deadline, Litton will treat the sludge as if it were hazardous. Enclosed are analysis by independent testing labs of our sludge. The samples were approximately one liter in size and taken as representative grab samples. The samples were taken at the North East and South West corners of our lagoon. All samples were collected in inert, clean containers.

C. Based on calculations enclosed, approximately 1800 yd^3 of sludge will have accumulated. Our contractor, National Industrial Environmental Service (NIES) will remove, transport, and dispose of the sludge in a safe and timely manner. The disposal site will be Joliet, Illinois. Appropriate Illinois permits are currently being reviewed by the state of Illinois.

D. It is obviously the intent of the D.N.R. to insure the levels of EPA EP toxic contaminants in the residual soil are safely below the maximum levels allowed. The analysis included demonstrates that except for lead and chromium, contaminants in our sludge are below the maximum levels allowed by at least a factor of ten. The level of lead and chrome are also below EPA EP toxicity levels. These extremely low levels of EP toxic contaminants are due to either very limited use within our plant of chemicals containing these contaminants, or the levels present are simply background levels present in the soil on Advanced Circuitry property. Thus, Advanced Circuitry contends that except for chrome and lead, all EPA EP toxic contaminants in our residual soil are so insignificant as not to warrent testing.

Advanced Circuitry proposes to remove the residual soil beneath "A" pond to a depth where, by Atomic Absorption analysis, the levels of chrome and lead are 50% less than the levels recommended by the EPA. That is, soil will be removed until the levels of chrome and lead are less than 2.5 ppm each. This gives a 100% safety margin which ensure no danger to the environment.

The Atomic Absorption unit at Advanced Circuitry is capable of measuring concentration down to .002 ppm of chrome and .01 ppm of lead. It is on our unit that all metal concentrations will be determined.

E. After the sludge is removed, soil samples will be taken at locations shown in the attached sketch. Sample sizes will be approximately a liter in volume and taken from the soil surface. All samples will be analyzed and evaluated per item D above.

F. Any accumulation of sludge will be stored within the confines of "A" pond. The only need of accumulation is due to scheduling delays between shipments of our sludge. No sludge will be stored for longer than 90 days.

G. Prior to closure starting, the Springfield office of the Missouri Department of Natural Resources will be given five days notice. Actual closure will start between August 1st and August 15, 1982 and will take approximately 8 days. Final closure will consist of grading over and seeding of the site.

H. During closure operations, the DNR representative must be on site at all times due to our expected operating procedure. We plan to remove the sludge, sample, and cover the cleared area as we work our way across the pond.

265.113 Time Allowed for Closure

A. Closure is to take place within 180 days of last receipt of wastes.

B. We may apply to Regional Administrator for longer closure time.

265.114 Disposal or Decontamination of Equipment

A. All the equipment and structures used in the closure shall be properly disposed of, or decontaminated by high pressure water spray applied within the confines of "A" pond. This is to be done by NIES.

265.115 Certification of Closure

A. Upon closure, Litton shall submit to the Regional Director certification thereof signed by the operator and an independent professional registered engineer. The engineering firm of Hood-Rich has been contracted to oversee our operation. The engineer of Hood-Rich, Mr. Paul Hickman, feels that a daily inspection of between one and two hours should adequately enable him to properly evaluate our closure operation.

B. Litton will make every effort to comply with the September 15, 1982 closure and certification date.

Chemical Waste Management, Inc.
Environmental Remedial Action Division
150 W. 137th Street
Riverdale, Illinois 60627
312/841-8600

July 15, 1982

Litton Industries
Advanced Circuitry Division
4811 West Kearney
Springfield, Missouri 65803

Dear Mr. Copeland:

Chemical Waste Management's ENRAC Division appreciates the opportunity to submit a proposal to remove and dispose of sludge in a lagoon at your Advanced Circuitry Division in Springfield, Missouri.

ENRAC has undertaken and successfully completed many lagoon cleanings in a safe and cost efficient manner. We are confident that we can provide you with service that is unmatched in the industry.

The transportation and disposal figure to Joliet, Illinois is calculated by using a minimum of 22 yd^3 per truck load. The figure is also contingent upon receipt of a state disposal permit.

Application for said permit was made 2 July 82. We should receive approval of this application by the end of July. As you will note in our quotation, I estimate the time required to complete work on your lagoon at 8 working days. This means we can begin work as late as 1 September and complete the closure of the lagoon by your 15 September deadline.

Very truly yours,

Scott Schedell
Project Coordinator

SS/db

Chemical Waste Management Inc.

TECHNICAL PROPOSAL

The scope of work for this project can be grouped into 3 phases.

1. Cleaning of the lagoon and stockpiling, for loading, of the lagoon sludge

2. Loading of the stockpiled sludge in sealed dumptrailers for transportation to a secure landfill

3. Backfilling and grading of the cleaned lagoon

We propose to use one machine, a track type loader, to complete the 3 phases. This will keep excavating and mobilization costs to a minimum.

When operations begin a hole will be excavated in the surrounding containment berm to facilitate the loading of the sludge material. The loader will then enter the lagoon area and begin stockpiling the sludge near the hole in the containment berm. A representative from your company will have to make a determination as to when the extent of excavation is adequate.

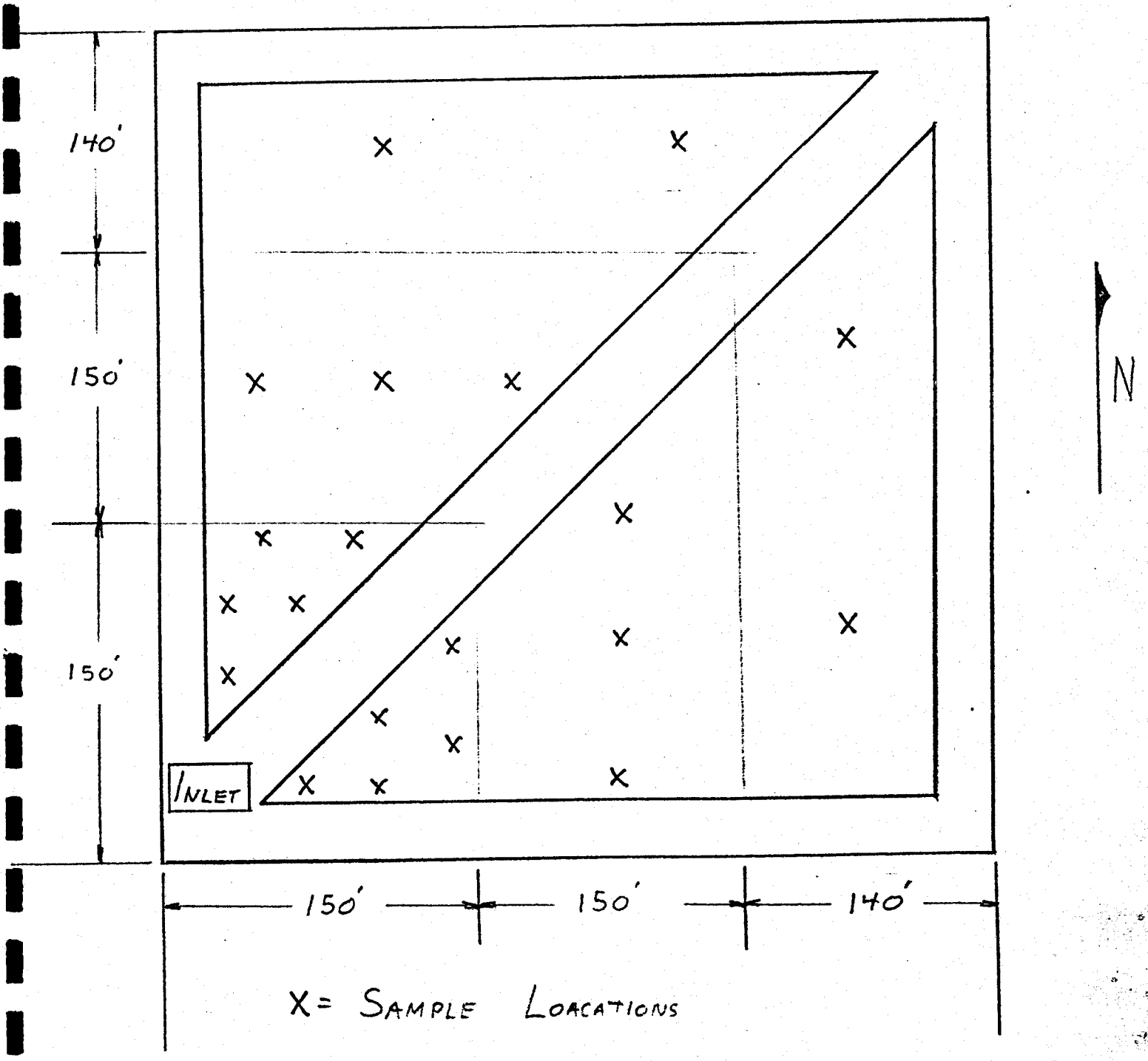
Backfilling operations will begin immediately in clean areas. This will be done by dozing the containment berm into the clean area. The entire lagoon area will then be graded for drainage and appearance.

This proposal is based on the assumption that the sludge material can be loaded as is. No provision is made for solidification agents or solidifying procedures.

We propose to remove 300 yd^3 of sludge material per day. This will enable us to complete the project in approximately 8 working days.

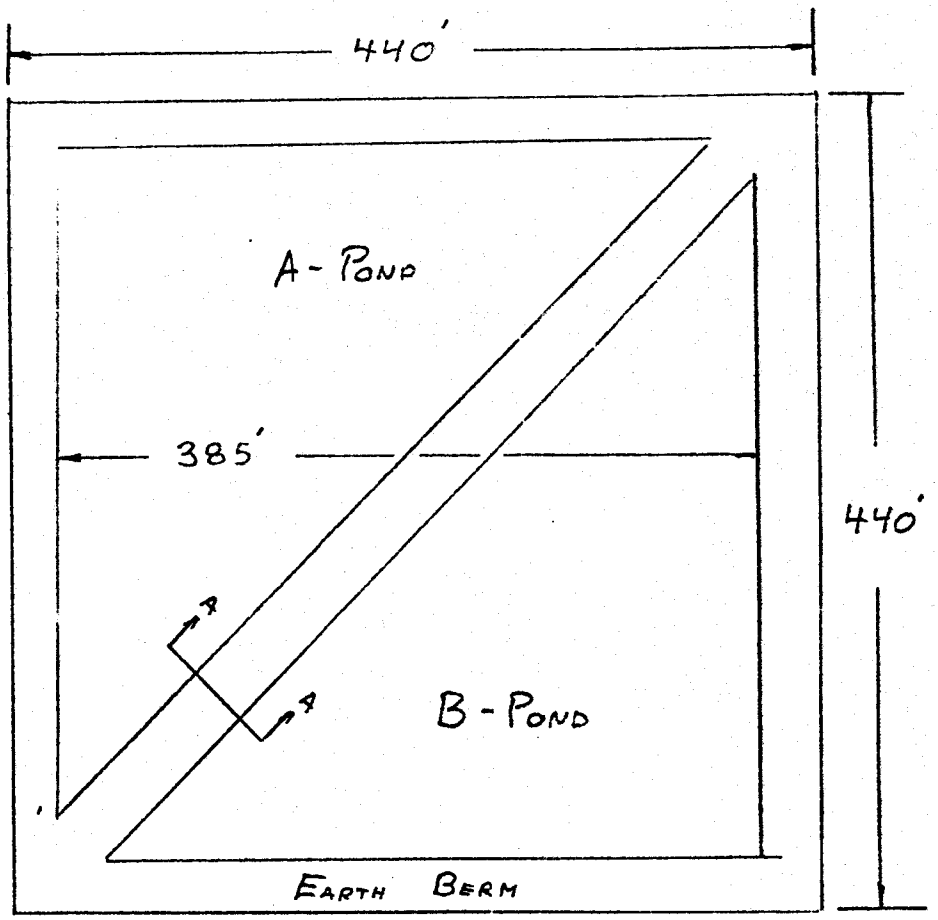
Litton ADVANCED CIRCUITRY
P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

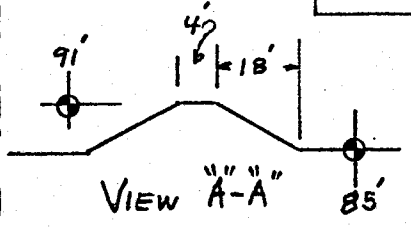
SAMPLING PLAN



X = SAMPLE LOACATIONS

Litton ADVANCED CIRCUITRY
P. O. Box 2847. Commercial Station, Springfield, Mo. 65803 417 862-0751





VOLUME CALCULATION

ASSUME ① "A" lagoon & "B" lagoon equal size
② Depth of sludge adverages 4"

$$V = 2\left[\tfrac{1}{2}bh\right]\left[\tfrac{4}{12}\right]$$

$$= 2\left[\left(\tfrac{1}{2}\right)\left(385' - \left(18' + \tfrac{4'}{2}\right)\right)\left(385' - \left(18' + \tfrac{4'}{2}\right)\right)\right]\left[\tfrac{4}{12}\right]$$

$$= 44{,}408\ ft^3 \rightarrow \approx 1600\ yd^3$$

Allow 10% error

$V \triangleq 1800\ yd^3$ max
$1400\ yd^3$ min.

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MAIN OFFICE AND LABORATORIES BOX 169 TELEPHONE 623-1556

ESTABLISHED 1898

Joplin, Missouri
64801

June 3, 1982

Litton Industries - Advanced Circuitry Division
4811 West Kearney
Springfield, Missouri 65803

969348 Sample of Sludge from A & B Pond

Tested per Missouri DNR - 10 CSR 25-4.010 Hazardous Waste Identification:

	Results	Specifications
Ignitable Hazardous Waste:		
Flash Point, ASTM D-93	80°C+	60°C
Spontaneous/Friction, Etc.	No	
Ignitable Gas	No	
Oxidizer	No	
Corrosive Hazardous Waste:		
pH	8.6	3 - 12
Corrode Steel	No	
Reactive Hazardous Waste:		
Is normally unstable and readily undergoes violent chemical change but does not detonate; reacts violently with water, forms potential explosive mixtures with water, or generates toxic fumes when mixed with water; or is a cyanide or sulphide-bearing waste which might degenerate toxic fumes under mildly acidic or basic conditions	No	
Is capable of detonation or explosive reaction but requires a strong initiating source or which must be heated under confinement before initiation can take place, or which reacts explosively with water	No	

969348 Sample of Sludge from A & B Pond

	Results	Specifications
Reactive Hazardous Waste: (Continued)		
Is readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures	No	
Is a forbidden explosive (e.g. such wastes include pyrophoric substances, explosives, Autopolymerizable material and oxidizing agents)	No	
		Extract Level mg/l
Toxic Hazardous Waste:		
Arsenic	<0.01	0.5
Barium	1.00	10.0
Cadmium	<0.01	0.1
Lead	1.70	0.5
Mercury	<0.001	0.02
Selenium	<0.01	0.1
Silver	<0.05	0.5
Cyanide	<0.05	
Sulfides	<0.001	
Copper	14.20	
Nickle	26.00	
Zinc	2.50	
Chromium	4.20	

THE ABOVE FIGURES ARE AS DETERMINED IN OUR LABORATORIES.

THE BRUCE WILLIAMS LABORATORIES

C/4-4301

General Testing Laboratories, Inc.
Engineering — Chemical Consultants
1517 WALNUT STREET / KANSAS CITY, MISSOURI 64108 / 816-471-1205

50 Years of Service

Date June 14 198 2 Number 42651

Sample of Sludge

Marked Received in lab 5-17-82 P. O. # 71794

Client Litton Industries, Inc.

EP Toxicity (Leachate), Federal Register/Vol. 45, No. 98/ Monday, May 19, 1980, Vol. 45, No. 212/Thursday, October 30, 1980; Vol. 46, No. 129/Tuesday, July 7, 1981

Arsenic	18 micrograms/liter
Barium	Less than 0.05 mg./liter
Cadmium	Less than 0.01 mg./liter
Chromium (Total)	0.65 mg./liter
Chromium (VI)	Less than 0.01 mg./liter
Lead	0.23 mg./liter
Mercury	Less than 0.2 micrograms/liter
Selenium	20 micrograms/liter
Silver	Less than 0.01 mg./liter
Copper	13 mg./liter
Nickel	14 mg./liter
Zinc	0.57 mg./liter
Total As Received:	
Cyanides	2.89 %
Sulfides	Less than 1.0 mg./liter

GENERAL TESTING LABORATORIES, INC.

By Lawrence Poibner

(l)cl

Form 110B

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Copper	Cu	36,982.0 mg/1 (3.7%)	45.0 mg/1
pH		7.6	5.5
Total Cyanide	Cn	<0.01 mg/1	<0.01 mg/1
Barium	Ba	10.0 mg/1	<0.01 mg/1
Mercury	Hg	<0.001 mg/1	<0.001 mg/1
Chromium - Hexavalent	Cr	2.0 mg/1	<0.01 mg/1
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Nickel	Ni	1,869.0 mg/1	2.50 mg/1
% Weight Volatiles @ 100°C.		18.72%	---
@ 600°C.		12.48%	---
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Copper	Cu	2,879.0 mg/l	5.9 mg/l
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EPA HAZARDOUS WASTE STORAGE PERMIT
INTERIM REQUIREMENTS
Defined for Litton Advanced Circuitry Division
Storage Lagoons A & B
(Original 11/19/80, Rev 1 8/25/81, Rev 2 3/82, Rev 3 4/15/82)

Subpart B - General Facility Standard

265.13 General Waste Analysis

A. The following parameters of substances stored in "A" pond shall be tested for annually in December. The rationale for selection includes EPA requirements, DNR requirements, and a knowledge of our wastes produced:

Sludge	Solution
Chlorides	Cyanide
Iron	Copper
Manganese	Nickel
Phenols	Chromium
Sodium	Zinc
Sulfates	Lead
pH	Cadmium
Specific Conductance	Ammonia
Total Organic Carbon	Total Dissolved Solids
Total Organic Halogen	Total Suspended Solids
Chromium	Chlorides
Cyanide	Iron
Copper	Manganese
Nickel	Phenols
Zinc	Sodium
Solubility in Water	Sulfates
Specific Gravity	pH
Vapor Density	Specific Conductance
% By Weight of Volatiles 100°C	Total Organic Carbon
% By Weight of Volatiles 600°C	Total Organic Halogen
Boiling Point	

B. All tests to be run in accordance with EPA Standard Methods by an independent outside lab or our internal laboratory.

C. Sampling is done in accordance with ASTM Standards D346-75, D420-69, D1452-65, D2234-76, or EPA Standards 600/2-8-018, January 1980.

265.14 Security

A. Physical contact or disturbance of waste does not constitute probable injury.

B. Security measures do include the following:

1. 24 hour armed guards on premises

2. Total fenced enclosure
3. Controlled entry
4. Adequate signage

265.15 General Inspection Requirements

A. The storage ponds shall be inspected daily and recorded as follows:
   1. Pond walls for erosion and leakage
   2. Pit pump and associated piping for operation and leakage
   3. Operation and recording of level indication
   4. Storage areas for rust, corrosion, cracks, leaks, missing or improper labels, and spills.
   5. Emergency equipment for operation
   6. Fence for damage
   7. Fugitive air emissions

B. Inspections shall be recorded in a log with Date and Time, Person's Name Inspecting and Notation. All repairs are also to be recorded.

265.16 Personnel Training

A. Personnel handling hazardous waste shall attend both classroom and OJT directed at their specific job functions.

B. Hazardous waste handling personnel are defined as follows:
   1. Recycle Operators
   2. Plating Maintenance Persons
   3. Associate Engineer
   4. Plant Engineer
   5. Supervision of Above

C. Instruction responsibility is given to the Facilities Manager.

D. Contents of classroom instruction and OJT shall be comprised of:
   1. Missouri Hazardous Waste Rules & Regulations
   2. EPA Regulations
   3. Basic Hazardous Waste Chemistry & Handling
   4. Process Flow In and Out of Plant
   5. Safety
   6. Contingency Plan Implementation
   7. Emergency Responses
   8. Inspection Procedures
   9. How to Cut Off Waste Flow
   10. Communication Systems
   11. Fire Response
   12. Ground Water Contamination Response
   13. Operational Shutdown Plan
   14. Training Requirements
   15. Reporting Requirements
   16. Individual Responsibilities

E. Classroom training shall take place annually and within 6 months for newly hired personnel.

F. No untrained persons shall work unsupervised.

G. Records are maintained in both facilities and personnel.
H. Job descriptions and placement are available in personnel.
I. Training records available in personnel and facilities.
J. Records on terminated personnel to be kept for 3 years.

Subpart C - Preparedness & Prevention

265.31 Maintenance & Operation of Facility
A. The storage facility shall be maintained to minimize release of contents per other sections of the plan. Inspection criteria defined in 265.15.

265.32 Required Equipment
A. Telephone systems shall be maintained to allow immediate dissemination of information or notice of a release of hazardous material.
B. Equipment such as pumps and the tractor shall be maintained in operational condition to handle the possibility of release.
C. A secondary earthen dam is constructed to contain a primary release of material and allow time for implementation of the contingency plan.

265.33 Testing and Maintenance of Equipment
A. All equipment in 265.32 is in continual use and therefore constantly tested for operation.

265.34 Access to Communications or Alarm System
A. No direct handling of wastes exists except in sludge press room where a telephone system is operational.

265.37 Arrangements With Local Authorities
A. Copies of the contingency plan have been sent to local Police, Sheriff, Sanitary Services and DNR Offices.

Subpart D - Contingency Plan & Emergency Procedures

265.51 Purpose & Implementation of Contingency Plan
A. This contingency plan is defined in the following sections:

265.52 Content of Contingency Plan
A. The probable failures of the storage lagoons are as follows:
1. Failure of pit pump
2. Dike leaks
3. Dike failure
B. In the case of any of the above, operators should:
1. Notify the emergency coordinator
2. Take immediate action to solicit help and contain the waste to a minimum area.
C. If the pit pump has failed, immediate replacement or repair is necessary. Spare parts and/or pump are

available in the maintenance department. Note: A secondary dam is constructed so pump failure constitutes no eminent danger.

D. Dike leaks should be immediately closed off to prevent flow of waste. Note: Leaks from West wall do happen and are controlled by the pit pump. Of major concern are leaks from North, East, and South walls. The tractor shall be used to strengthen dikes to stop leakage. Any contaminated earth shall be removed and barrelled or run through the filter press for disposal.

E. In case of dike failure, all wastes should be routed to the pit pump area or additional dams shall be built to provide a pumping station for pumps to pump waste to "C" pond for temporary storage. ("C" pond is a lined pond.)

F. Primary Coordinator: James Dow, Director of Technical Services
3317 S. Danbury
Springfield, Missouri 65807
work: 1-417-862-0751
home: 1-417-885-9785

Secondary: George Copeland,
Senior Plant Engineer
3654 S. Dayton
Springfield, Missouri 65807
work: 1-417-862-0751
home: 1-417-887-2675

G. Equipment
1. 1 John Deere 830 Tractor with front end loader
2. 2 8h.p. 3" gasoline pump
3. 1 20h.p. 4" gasoline pump
4. Associated piping and hoses
5. Telephone system
6. Personal pocket pagers
7. Internal paging
8. Lime sand and chat on hand

All equipment located with facility, capabilities obvious.

265.53 Copies of Contingency Plan

A. Copies are maintained in:
1. Facilities Manager's Office
2. Plant Engineer's Office
3. Recycle Operator's Manual
4. Sent to those offices listed in 265.37 (A).

265.54 Amendment of Contingency Plan

A. The plan shall be amended as follows:
1. Regulations change
2. The plan fails
3. The facility changes
4. Coordinators change

5. Equipment changes

265.55 Emergency Coordinator

1. The 24 hour emergency coordinators are as follows:

Primary - James Dow, Director of Technical Services
3317 S. Danbury
Springfield, MO 65807
work: 1-417-862-0751
home: 1-417-883-9785

Secondary - George Copeland, Senior Plant Engineer
3654 S. Dayton
Springfield, MO 65807
work: 1-417-862-0751
home: 1-417-887-2675

265.56 Emergency Procedures

A. In case of emergency, the coordinator shall:
   1. Take command
   2. Activate the contingency plan
   3. Notify appropriate personnel
   4. Evaluate the extent of the situation and assess appropriate detailed action
   5. Notify the National Response Center 1-800-424-8802 and indicate the following:
      a. Name and telephone of reporter
      b. Name and address of facility
      c. Time and type of incident
      d. Name and quantity of materials
      e. Injuries
      f. Possible hazards
   6. Take action to treat or store contaminated soil or surface waters.
   7. Emergency equipment is cleaned
   8. Notify Local, State, and the Regional Officials before operation is resumed.
   9. Submit a written report to the Regional Administrator including the following:
      a. Name, address, and telephone number of operator
      b. Name, address, and telephone number of facility
      c. Date, time, and type of incident
      d. Name and quantity of material involved
      e. Extent of injuries
      f. Assessment of actual or potential hazards
      g. Estimated quantity and disposition of recovered material

Subpart E - Manifest System

265.73 Operating Record

A. The hazardous waste storage site is the lagoon N.E. corner defined by 93° 22' 42" & 37° 14' 43"

B. The following shall be recorded and maintained:
   1. All analysis of wastes shall be recorded
   2. Records of incidents
   3. Records and results of inspections
   4. Monitoring, testing, and analytical data

265.74 Availability, Retention, & Disposition of Records

A. All records shall be made available upon request or for inspection by any officer, employee, or representative of the EPA.

B. Upon closure, disposal locations and quantities shall be submitted to the Regional Administrator.

265.75 Annual Report

Deleted by EPA

265.77 Additional Reports

A. In addition to the Annual Report and unmanifested waste report, the following shall be submitted to the Regional Administrator:
   1. Releases, fires, and explosions
   2. Ground water contamination and monitoring data
   3. Facility closure

Subpart F - Groundwater Monitoring

265.90 Groundwater Monitoring Applicability

A. Under review by state.

265.91 Groundwater Monitoring System

265.92 Sampling and Analysis

Subpart G - Closure and Post-Closure

265.111 Closure and Post-Closure

A. Owner shall close facility in a manner to minimize all hazards.

265.112 Closure Plan

A. In March, 1982, the city sewer system was available for hookup and Litton began its use for effluent discharge. At that time, Litton discontinued discharging effluent waters to A pond. Due to the DNR Eminent Hazardous Action of March, 1982, it is expected that the waste water in A pond may be removed by May 1, 1982. We will begin closure on approximately May 10, 1982.

B. Based on calculations, approximately 1800 cubic yards of sludge will have accumulated and will be removed

to a hazardous waste site. A plan submitted by the contractor, O. H. Materials Company, has been submitted and is included in this report.

C. Decontamination of equipment will include wash-down within the pond itself.

D. Actual closure will start in May, 1982, and will take approximately 2 months of excavation and loading time. Final closure will consist of grading over and seeding of the site.

265.113 Time Allowed for Closure

A. Closure is to take place within 180 days of last receipt of wastes.

B. We may apply to Regional Administrator for longer closure time.

265.114 Disposal or Decontamination of Equipment

A. All the equipment and structures used in the closure shall be properly disposed of or decontaminated by high pressure water spray.

265.115 Certification of Closure

A. Upon closure, Litton shall submit to the Regional Director certification thereof signed by the operator and an independent professional registered engineer.

B. Expected certification date is August, 1982.

Subpart H - Financial Requirements

265.142 Cost Estimate for Facility Closure

A. Litton has developed closure costs for facilities for $465,000 per contract.

Subpart K - Surface Impoundments

265.222 General Operating Requirements

A. Operation of lagoons shall be maintained 2 feet below runover.

B. All dams, dikes, and walls shall have grass covering.

C. Operating level shall be recorded daily.

D. Dikes, walls, and vegetation shall be inspected for leaks, deterioration, or failure weekly.

265.228 Closure

A. Litton shall remove:

1. Standing liquids
2. Waste and waste residue
3. Underlying and surrounding contamination soil

Litton

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

October 8, 1982

Mr. John Nixon
Regional Administrator
Missouri Department of Natural Resources
1155 E. Cherokee
Springfield, Missouri

Re: Lagoon Closure

Dear Mr. Nixon,

Since our conversation of September 14, when we agreed that:

A) all sludge was removed
B) all non-hazardous limestone was covered by approximately six inches of dirt
C) the two foot of final cover was not in place, but as long as ACD worked at getting the cover as quickly as possible, the local DNR felt all was acceptable and we were following the intent of the law

ACD has graded the lagoon site so that the area has proper cover and drainage.

Today, October 8, the engineering firm of Hood-Rich will survey the site for documentation. Under the direction of Mr. Paul Hickman, ACD will today, seed the site with red fescue for cover.

It is hoped that Mr. Hickman will be able to file his report by October 29, 1982. This final report will complete our closure.

Sincerely,

David Edwards
Facilities Manager

DE/bs

CC: Paul Hickman, Hood-Rich

EXHIBIT "B"

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 1

DATE Aug. 20, 1982 TIME - WEATHER P.C. TEMP. 75°
JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney
OWNER Advanced Circuitry Div. - Litton Industries - Springfield, Mo.
CONTRACTOR Chemical Waste Management Inc.
WORK IN PROGRESS TODAY

Considerable rain in early morning hours resulted in most of pond bottom being covered with water. Contractor used dozer to open middle of southern half so dewatering could be done. Contractor & Litton personnel started dewatering with portable pump. Discharge was directed to "C" pond for recycle to plant treatment facility.

Six trucks were on site ready for loading.

On job site from 9:05 AM to 10:15AM

Personnel Contacted:

Jim Dow - ACD
David Edwards - ACD
George Copeland - ACD

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 2

DATE August 31, 1982 TIME _____ WEATHER P. Sunny TEMP. 82°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries - Springfield

CONTRACTOR Chemical Waste Management Inc.

WORK IN PROGRESS TODAY

Area remains very wet, unable to load trucks.

Discussion between contractor, ACD & DNR as to methods for further dewatering or addition of absorbents such as fly ash from CU Power Plant. This was of concern to David Edwards (ACD) because State of Illinois permit is for a maximum of 2000 c.y. Bert McCullough of DNR was to contact DNR personnel in Jefferson City to discuss the problem.

Sample taken of soil under point B1. Results will be available later today.

David Edwards will contact if further developments occur.

On job site from 9:30 AM to 10:20 AM

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 3

DATE Sept. 1st, 1982 TIME _____ WEATHER Sunny-Hot TEMP 93°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries - Springfield

CONTRACTOR Chemical Waste Management Inc.

WORK IN PROGRESS TODAY

Arrived at job site at 10:00 AM

Was informed that 15 truckloads were hauled out late on 8/31. Area appears to be drying up better.

Bert McCullough (DNR) related that sample B1 was OK and that he had just sampled B2.

Dozer and loader both continued to push material to the SW corner for loading particularly in "A" pond area.

Went with Bert McCullough to sample B3, B4 and B5.

Was informed by Mr. McCullough that that lead concentration limit was changed from a mg/l basis to mg/kg.

Observed loading of two trucks.
(Everything appears to be proceeding satisfactorily.).

Bert McCullough verbally approved closure of area B1.

Contacts:

WORK REJECTED	David Edwards	- ACD
	~~Jim Dow~~	~~ACD~~
	George Copeland	ACD
	Ron Enos	ACD
	~~Bert McCullough~~	~~DNR~~

Departed project job site 3:30 PM

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT #4

DATE Sept. 2nd, 1982 TIME _____ WEATHER Hot TEMP. 88°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR Chemical Waste Management, Inc.

WORK IN PROGRESS TODAY

Arrived on site at 10:00 AM

Samples B3, 4 and 5 and All "A" samples taken on 9/1 failed due to lead content. B2 is oK

Light rain fell in the early morning hours.

Trucks continued loading.

Resampled areas A1 thru 5 and B3 thru 5 with David Edwards. "B" areas very wet and hard to walk in. Test results will be available early on 9/3

Left job site at 3:30 PM

Contacts:

David Edwards	ACD
George Copeland	ACD

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 5

DATE Sept. 3rd, 1982 TIME _____ WEATHER Clear TEMP. 85°

JOB NO. 82-217 JOB Pond Closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries - Springfield

CONTRACTOR _____

WORK IN PROGRESS TODAY

Arrived on site at 8:00 AM

Lab analyses of A1 thru A4 showed all metals to be below the allowable levels. Also, samples B3 and B5 OK. A5 was too high in Pb and B4 in Ni. Closure OK'd by Bert McCullough for B1, B2, B3 and B5, A1, A2, A3 and A4. Leveling of the dike started in the SE corner (B2 and B5).

Trucks continued to be loaded out. It is estimated that a total of nine will haul today.

Recommended that Hood-Rich survey party cross section the pond and area around to determine quantity of material for fill and to make final cover and to also provide a basis to make final check for the 2' minimum. Will try to do this Wednesday morning (Dave Edwards approved)

Contacts:

Ron Enos	ACD
Jim Dow	ACD
Dave Edwards	ACD
Bert McCullough	DNR

Departed job site at 2:45 PM

WORK REJECTED _____

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 6

DATE September 7, 1982 TIME _____ WEATHER P.C. TEMP. 80°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industires

CONTRACTOR Chemical Waste Management, Inc.

WORK IN PROGRESS TODAY

Arrived at job site at 9:30 AM

Bert McCullough and David Edwards sampled areas B6 thru B10. Later area A5 was rescraped and sampled again.

Dozer and loader were leveling dikes on Southeast, east and northeast areas. Eastern half of south dike, all of hte east dike and a small part of North dike were leveled at days end.

Trucks continued to be loaded out.

Contacts:

Bert McCullough	DNR
Dave Edwards	ACD
George Coepland	ACD

On job 3-3/4 hours.

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 7

DATE Sept. 8, 1982 TIME _____ WEATHER Clear TEMP. 85°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR Chemical Waste Management, Inc.

WORK IN PROGRESS TODAY

Arrived at job site 9:00 AM

Hood-Rich survey party running cross sections of pond and surround area.

Areas A5 and B8 failed again. These locations were scraped further and resampled Re-analysis of A5 showed lead levels to be OK. B8 failed again.

Leveling of Dike in northeast corner continued. Started cutting through northwest corner.

Trucks continued to be loaded out.

Contacts:

Bert McCullough	DNR
Dave Edwards	ACD
George Copeland	ACD

On job 3 hours.

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____

Contractor _____

Hood-Rich _____

Other _____

INSPECTION REPORT # 8

DATE Sept. 9, 1982 TIME 2PM WEATHER Clear TEMP. 88°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR Chemical Waste Management, Inc.

WORK IN PROGRESS TODAY

Area B8 rescraped and sampled again.

Trucks continue to be located

Dike on south side and northeast end of center dike being leveled.

Contacts:

David Edwards ACD

George Copeland ACD

WORK REJECTED

Paul T. Hickman

INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 9

DATE Sept. 10, 1982 TIME 2PM WEATHER _____ TEMP. _____

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR Chemical Waste Management, Inc.

WORK IN PROGRESS TODAY

Most of center dike and all of south dike leveled.

Area B8 failed was scraped and sampled again. Samples were taken in areas A6 thru A10. Approximately six loads left to haul unless sampled areas fail.

Work will progress over the weekend on leveling of north and west dikes.

Contour plans were taken to Dave Edwards. There is more than sufficient material available in the dikes to accomplish the needed 2 foot minimum cover.

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____

Contractor _____

Hood-Rich _____

Other _____

INSPECTION REPORT # 10

DATE Sept. 13, 1982 TIME 10 AM WEATHER Clear TEMP. 82°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR Chemical Waste Management

WORK IN PROGRESS TODAY

Loading out trucks today. Appears that only a few more will be needed.

Track equipment continues to push dikes into pond bottom.

WORK REJECTED

Paul T. Hickman

INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 11

DATE Sept. 14, 1982 TIME 10:00 AM WEATHER PC TEMP. _____

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR Chemical Waste Management

WORK IN PROGRESS TODAY

Last trucks loaded out this morning.

Met with Dave Edwards and John Nixon (DNR) at site. It was agreed that all material has been satisfactorily removed and that final grading can continue to completion.

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT # 12

DATE Sept. 15th 1982 TIME 10 AM WEATHER P.C. TEMP. _____

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industries

CONTRACTOR _____

WORK IN PROGRESS TODAY

Only work proceeding was moving dirt for the final cover of the pond bottom. Appears to be working out very well.

Material in the dikes was very rocky as was expected. It is anticipated that it will take 2 - 3 weeks to move the necessary material.

At job site 30 minutes

WORK REJECTED

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____
Contractor _____
Hood-Rich _____
Other _____

INSPECTION REPORT #13

DATE Oct. 8, 1982 TIME 11:15 AM WEATHER Cloudy-Rain TEMP. 55°F

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD - Litton Industires

CONTRACTOR _____

WORK IN PROGRESS TODAY

Hood-Rich survey crew doing cross sections to determine the final grades.

Grass seed was being applied to the entire area.

"Sheeps foot" roller had been used and area appears to be compacted very well.

WORK REJECTED _____

Paul T. Hickman
INSPECTOR

HOOD - RICH, Architects and Consulting Engineers
801 South Glenstone
Springfield, Missouri 65802
A.C. 417 TELE. 862-4483

DISTRIBUTION

Owner _____

Contractor _____

Hood-Rich _____

Other _____

INSPECTION REPORT # 14

DATE Oct. 14, 1982 TIME 1:30 PM WEATHER Clear TEMP. 65°

JOB NO. 82-217 JOB Pond closure LOCATION 4811 W. Kearney

OWNER ACD = Litton Industries

CONTRACTOR _____

WORK IN PROGRESS TODAY

Met at site to go over final grade plan with Dave Edwards and Bert McCullough (DNR). The final plan showed that a small area on the west side (approximately 25' x 100') was about 1 - 2" less than the two foot of cover over the pond bottom. To bring this up will mean quite a bit of additional earth moving to grade from the north and northeast areas to this area.

Bert McCullough will check with DNR people in Jefferson City concerning final disposition.

WORK REJECTED

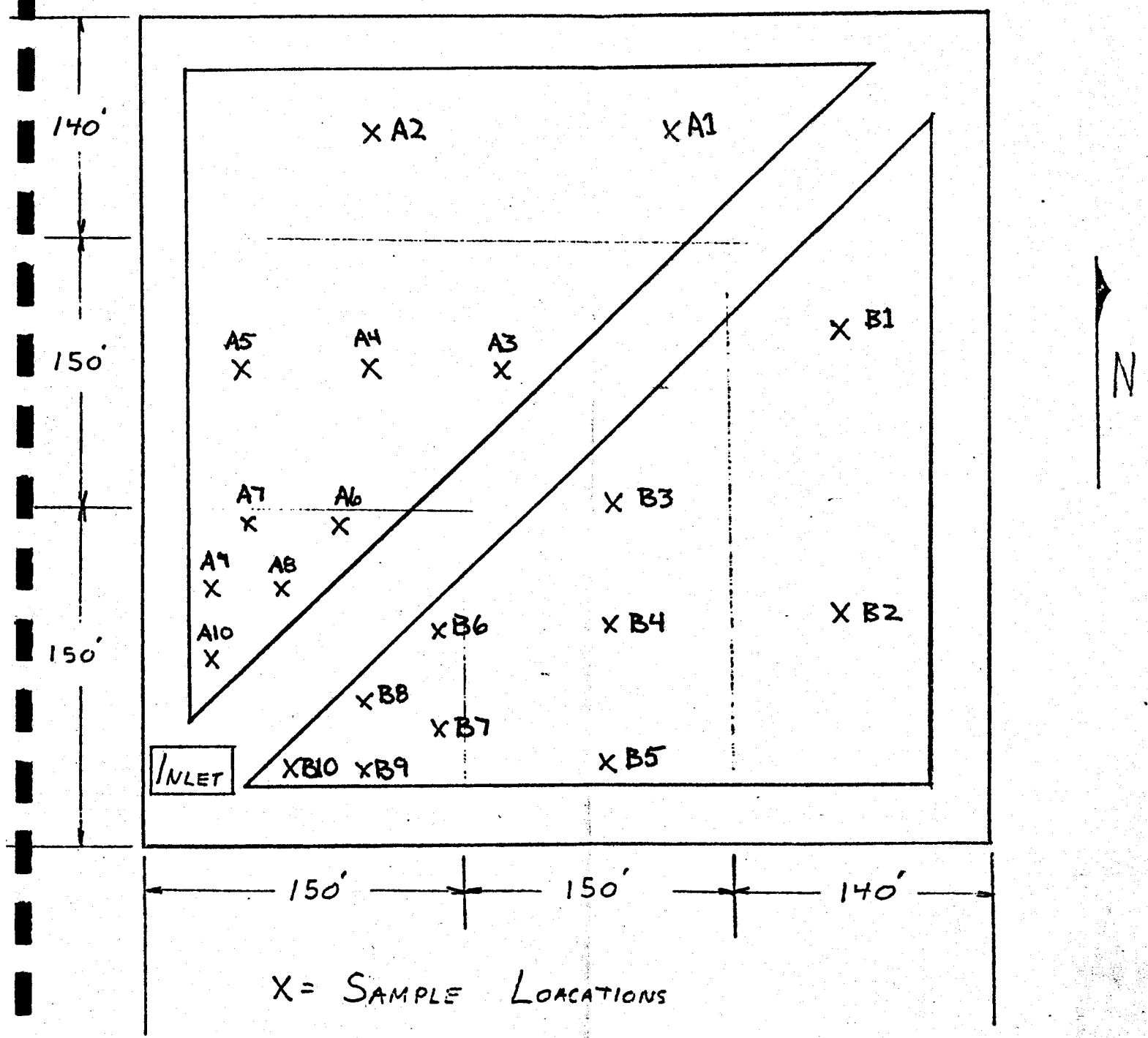
Paul T. Hickman
INSPECTOR

EXHIBIT "C"

Litton ADVANCED CIRCUITRY

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

SAMPLING PLAN



X = SAMPLE LOCATIONS

EXHIBIT "D"

Litton

P. O. Box 2847, Commercial Station, Springfield, Mo. 65803 417 862-0751

September 1, 1982

Mr. Fred Lafser
Director
Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102

Dear Mr. Lafser:

RE: Pond Closure at Litton
Advanced Circuitry Division

During a laboratory quality assurance visit by Mr. David Paulsen it was noted that standard units were not used in calculating the total lead. In a conference call with Mr. Meiburger, Mr. Paulsen, Mr. McCullough, Mr. Enos, Mr. Dow, and Ms. Siplinger it was agreed that the units of ppm should be converted to mg/kg. This in no way affects the actual limits proposed, but converts them into more universal units.

References to 1.5 ppm and 2.5 ppm of total lead should be converted to 150 mg/kg and 250 mg/kg respectively in part 265.112 section D of our closure plan.

Sincerely,

David Edwards
Facilities Manager

CC: Mr. Robert Schreiber
Mr. Paul Meiburger
Mr. Burt McCullough
Ms. Karen Flournoy
Mr. Robert Schaefer
Mr. Gerald Lucey
Mr. Ron Enos
Mr. James Dow
Mr. Paul Hickman

PS Form 3811, Dec. 1969

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● SENDER: Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).

☒ Show to whom and date delivered ..... ¢

☐ Show to whom, date, and address of delivery.. ¢

2. ☐ RESTRICTED DELIVERY ¢
(The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $

3. ARTICLE ADDRESSED TO: Jim Daw
Litton Systems
P.O. Box 2847
Springfield, Mo 65803

4. TYPE OF SERVICE:
☐ REGISTERED ☐ INSURED
☒ CERTIFIED ☐ COD
☐ EXPRESS MAIL

ARTICLE NUMBER
P 495 134 149

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

Bob Dawe

5. DATE OF DELIVERY

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SPRINGFIELD, MO COMMERCIAL STA.
JUN 6 1983

6. ADDRESSEE'S ADDRESS (Only if requested)

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7a. EMPLOYEE'S INITIALS

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Print your name, address, and ZIP Code in the space below.

- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

RETURN TO

U.S. EPA-Waste Management Branch
324 East 11th Street
K. C., MO 64106

(Name of Sender)

(Street or P.O. Box)

Attn: B. Harris

(City, State, and ZIP Code)